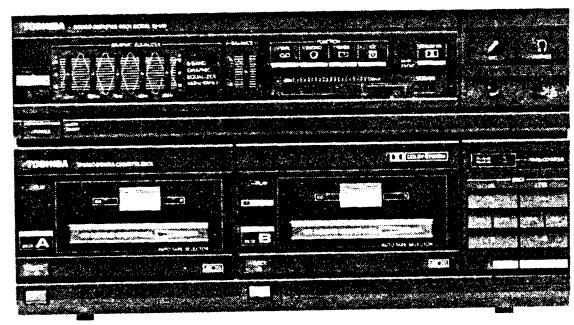
412552

SERVICE DATA
FILE NO. 170-239

TOSHIBA

STEREO AMPLIFIER DECK

SJ-V12



SPECIFICATIONS

■ Amplifier

Rated Output Power:	20W per channel, 10% THD, at 8 ohms, 1 kHz
Total Harmonic Distortion:	0.2% at half rated output power, 1 kHz
Input Terminals:	MIC (Mono, 6.3mm diameter), CD, PHONO
Output Terminals:	Headphones, speakers, turntable power souce
Input/Output Terminal:	Tuner
Graphic Equalizer:	Center frequencies: 63 Hz, 250 Hz, 1 kHz, 4 kHz, 12 kHz Adjustment range: ±10 dB
Signal-to-noise Ratio:	Phono: 72 dB CD: 85 dB

■ Cassette Deck

Track System:	4-track, 2-channel stereo
Recording System:	AC bias (85 kHz)
Heads:	Deck A: Pb: 1 Deck B: Rec/Pb: 1 Erase: 1
Wow and Flutter:	0.07% (WRMS)
Frequency Response:	40-16,000 Hz (Chrome position tape)
Signal-to-noise Ratio:	56 dB
Motors:	Capstan motor (electronically controlled DC type): 2 Reel motor (DC motor): 2

■ General

Power Supply:	220V ∿, 50 Hz (Europe, Germany) 240V ∿, 50 Hz (U.K., Australia)
Power Consumption:	57 watts
Dimensions:	340(W) x 188.5(H) x 250(D)mm
Weight:	5.5 kg

Specification are subject to change without notice.

TE, TD, TU, AY

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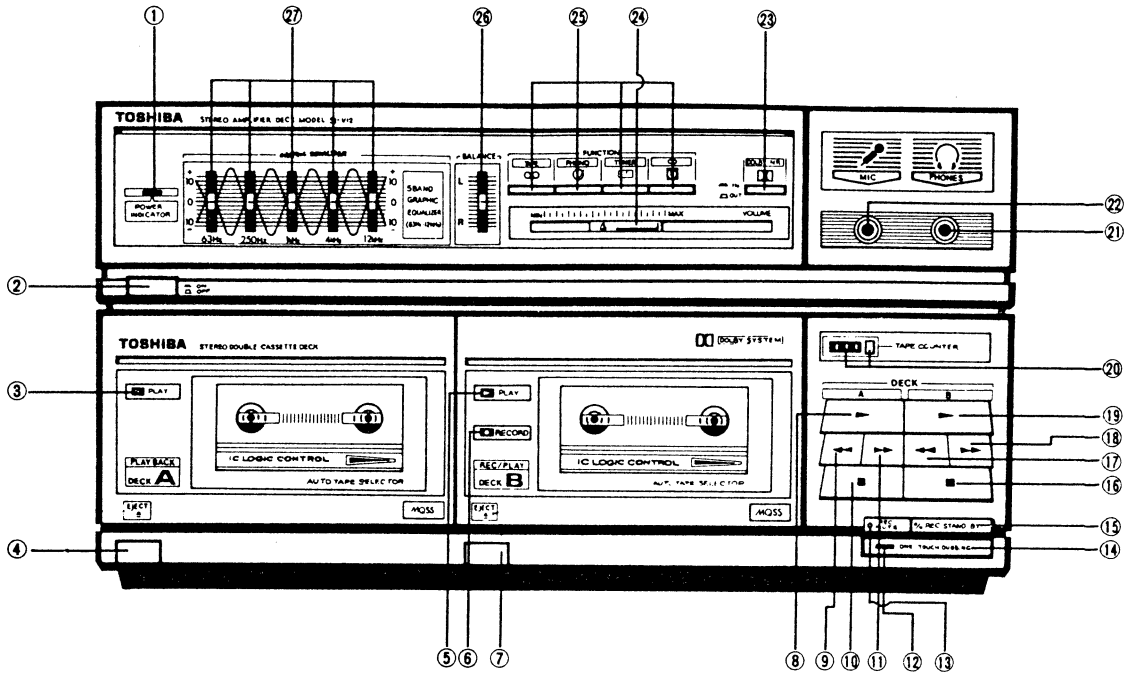
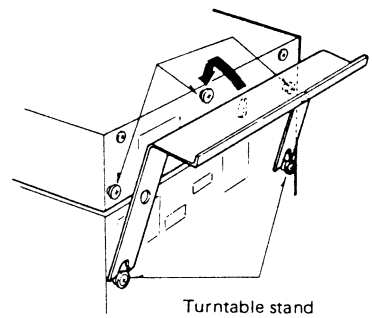
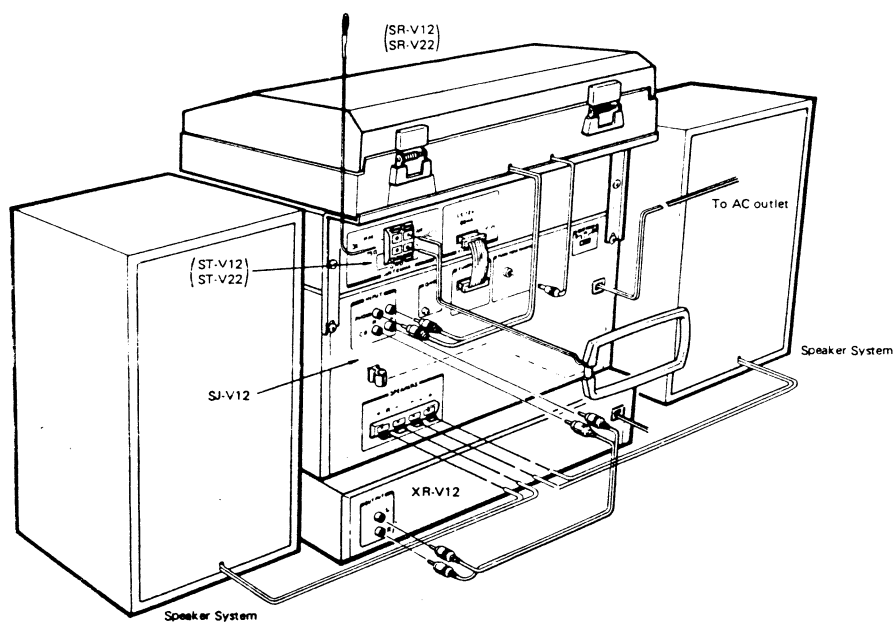
1. OPERATING CONTROLS





Turntable stand



① **POWER INDICATOR**

② **POWER Switch**

③ **PLAY Indicator (Deck A)**

④ **EJECT Button (Deck A)**
Press to open the cassette door.

⑤ **PLAY Indicator (Deck B)**

⑥ **RECORD Indicator**

⑦ **EJECT Button (Deck B)**

⑧ **▶ PLAY Button (Deck A)**

⑨ **◀◀ REWIND Button (Deck A)**
Press to wind the tape rapidly backward and to use the MQSS function (see page 7).

⑩ **■ STOP Button (Deck A)**
Press to stop tape transport.

⑪ **▶▶ FAST FORWARD Button (Deck A)**
Press to wind the tape rapidly forward and to use the MQSS function (see page 7).

⑫ **ONE TOUCH DUBBING Indicator**

⑬ **O REC MUTE Button**

⑭ **ONE TOUCH DUBBING Button**

⑮ **O/II REC STAND BY Button**
Press to switch to the recording stand by mode (only DECK B) in which the RECORD indicator flashes on and off. From this mode, actual recording is started by pressing the play button alone.
During recording, press this button to switch to the pause mode (RECORD indicator flashes on and off). To resume recording from that point, press the play button.

⑯ **■ STOP Button (Deck B)**

⑰ **◀◀ REWIND Button (Deck B)**

⑱ **▶▶ FAST FORWARD Button (Deck B)**

⑲ **▶ PLAY Button (Deck B)**

⑳ **TAPE COUNTER and Reset Button**
Use this counter to determine the present location on cassettes in DECK B.

㉑ **PHONES Jack**
A set of stereo headphones having a 6.3mm plug can be connected to this jack.

㉒ **MIC Jack**
A microphone can be connected to this jack. Turn the volume control down before inserting and removing the microphone plug.

㉓ **DOLBY NR* Button**
Depress to the IN (⟹) position to make a recording using Dolby Noise Reduction or play back a Dolby NR encoded tape. This button switches Dolby NR on and off in both DECK A and B. It does not operate during dubbing
* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

㉔ **VOLUME Control**

㉕ **FUNCTION Selector Buttons**
Use these buttons to listen to TAPE, PHONO, TUNER or CD.

㉖ **BALANCE Control**
This control adjusts the relative volume levels of the left and right speaker systems.

㉗ **GRAPHIC EQUALIZER Level Controls**
These level controls adjust response in the five frequency bands centered at the frequency shown above each control. Adjust these controls to produce the desired sonic effect. If no alteration of sound quality is required, set all five controls to the center "0" position. When making a recording, the level controls can be used to alter response of the sound being monitored, but the level controls have no effect on the sound being recorded.

CONNECTIONS

Note:
Do not switch power on or plug in the power cord until all connections have been completed.
If a turntable is to be placed above the amplifier-deck and tuner, place the turntable on the turntable stand included with this unit after attaching the stand to the rear panels of the amplifier-deck and tuner. (See page. 2)

Connecting the tuner
Connect the TUNER TERMINAL on the rear panel of this unit to the TUNER TERMINAL on the tuner (ST-V12 or ST-V22) using the connection cable included with this unit.

Connecting the turntable
- Connect the turntable (SR-V12 or SR-V22) to the rear panel PHONO input jacks of this unit being sure left (white) and right (red) are correctly connected.
- Connect the POWER cord of the turntable to the TURNTABLE POWER SOURCE jack on the rear panel of this unit.

Connecting the compact disc player
Use the CD jacks to connect a compact disc player.

Connecting the speakers
- Use only speaker systems having an impedance of 8 to 16 ohms with this unit.
- Remove the speaker cable coating to expose a section of wire about 6 to 10mm long. Then twist the strands of wire together. Connect the positive (+) speaker cable to the red speaker jack and the negative (–) speaker cable to the black speaker jack.

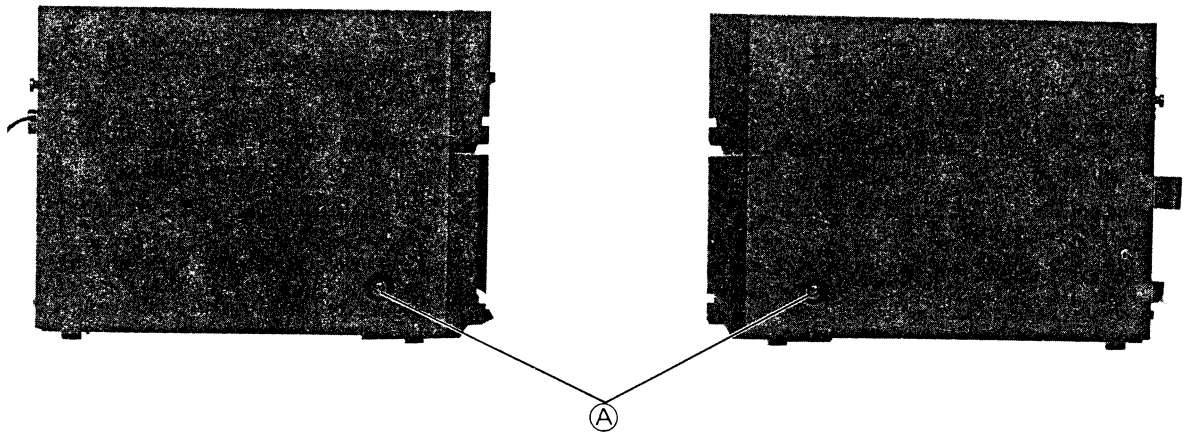
Connecting the AM loop antenna
- An AM loop antenna holder is located on the rear panel of this unit. Attach the loop antenna (included with this unit) to this holder and connect the loop antenna wire to the AM aerial terminals of the tuner. Then set the aerial in the angle in which reception quality is best.
- If reception is still not satisfactory, remove the antenna from the rear panel holder and place it in the location where reception quality is best. If the connection wire is not long enough, replace with a wire of sufficient length.

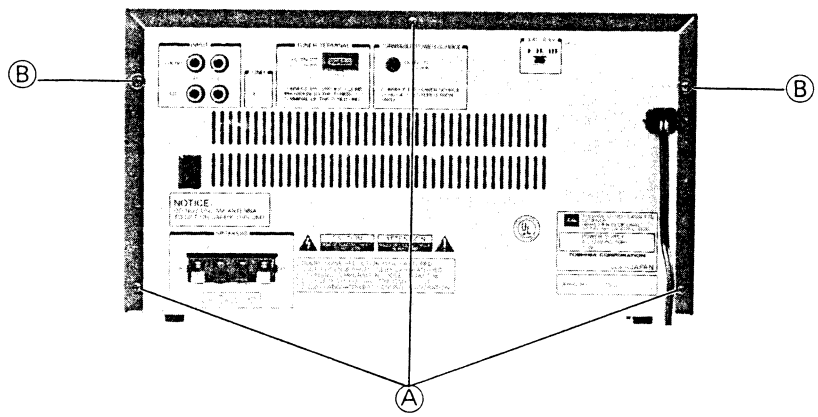
Locating the unit
In order to obtain optimum performance from this unit, be sure to observe the following precautions when selecting its location.
- Place the unit on a flat surface that is not subject to vibrations.
- Avoid direct sunlight and other locations that are directly exposed to heating appliances and other sources of heat.
- Avoid dusty locations.
- Avoid high humidity and locations where ventilation is poor.
- Do not expose this unit to very low temperatures.
- Do not place the unit near the speaker systems since howling may result.

2. DISASSEMBLY INSTRUCTIONS

TOP COVER REMOVAL

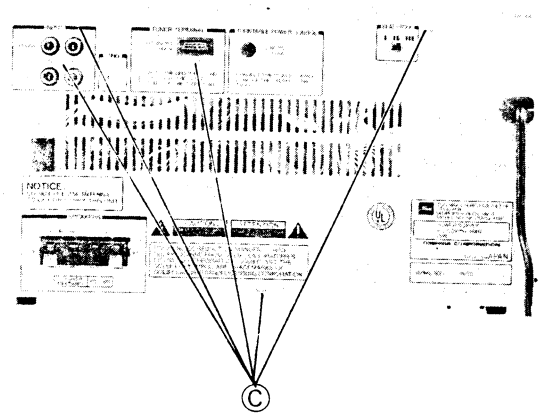
1. Remove five screws Ⓐ , two screws and two spacers Ⓑ , and the top cover removed.





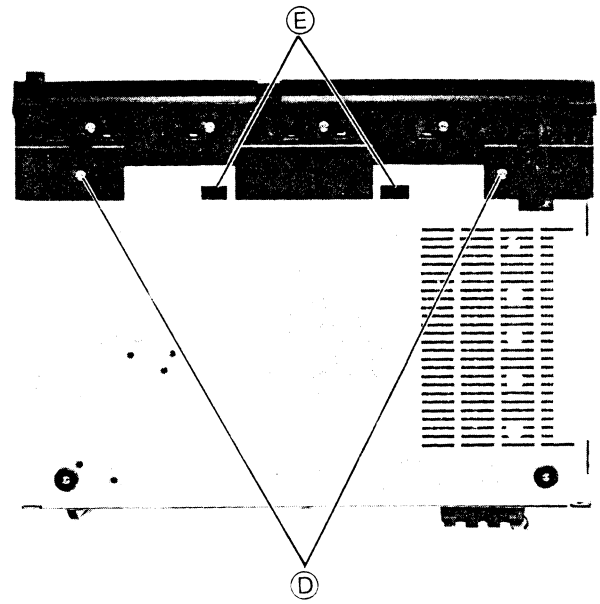
BACK PANEL REMOVAL

1. Remove five screws Ⓒ from back panel, and the back panel will be removed.



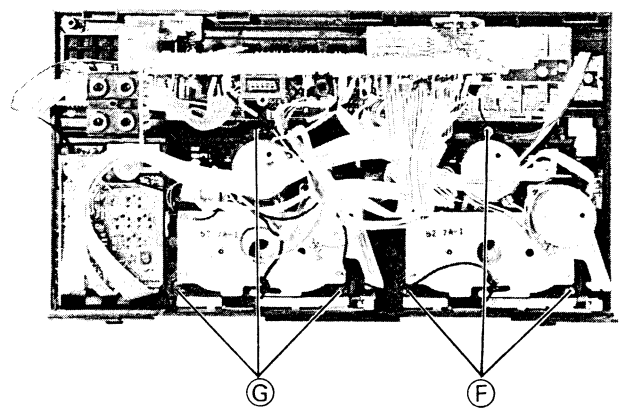
FRONT PANEL ASSEMBLY REMOVAL

1. Remove two screws Ⓓ fixing bottom plate of front panel.
2. Remove front panel by pulling it forward while pushing two hooks Ⓔ.

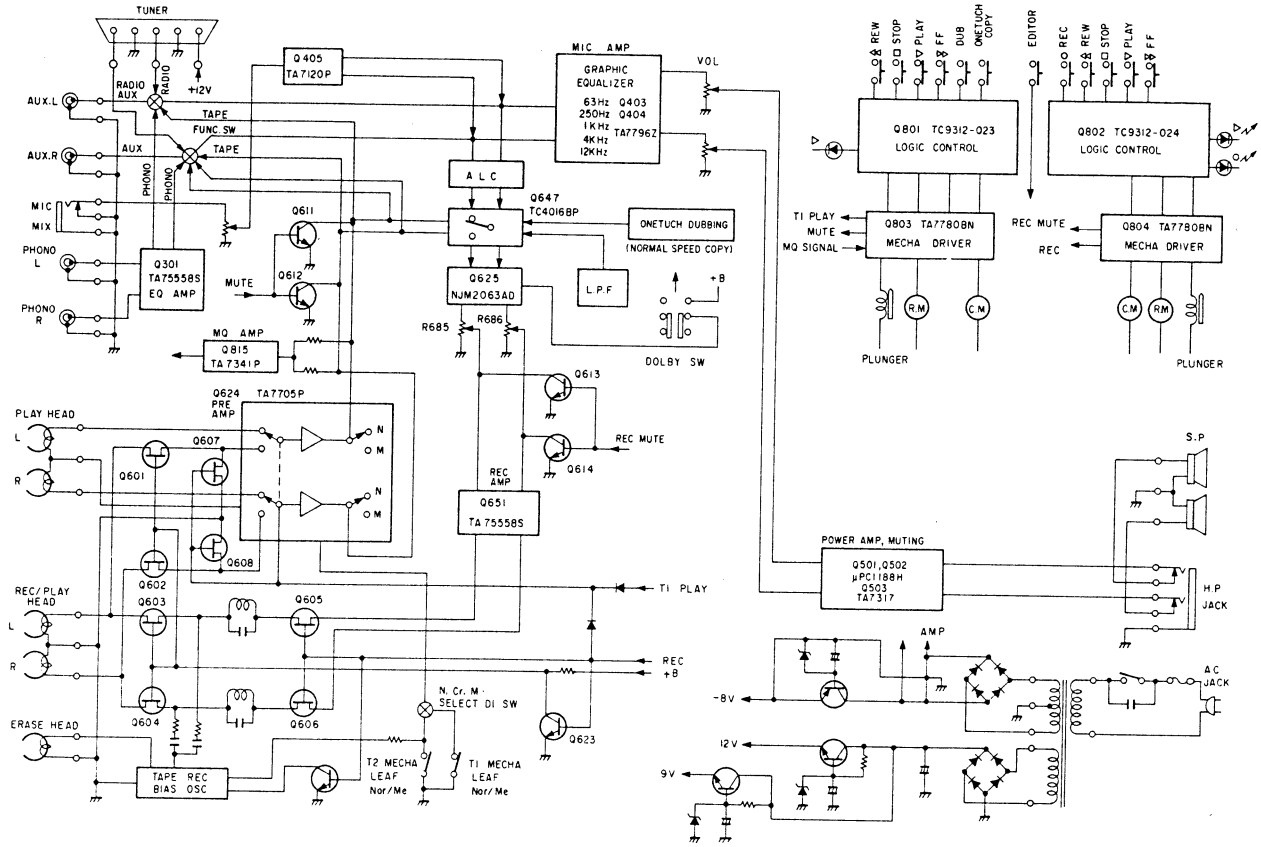


MECHANISM ASSEMBLY REMOVAL

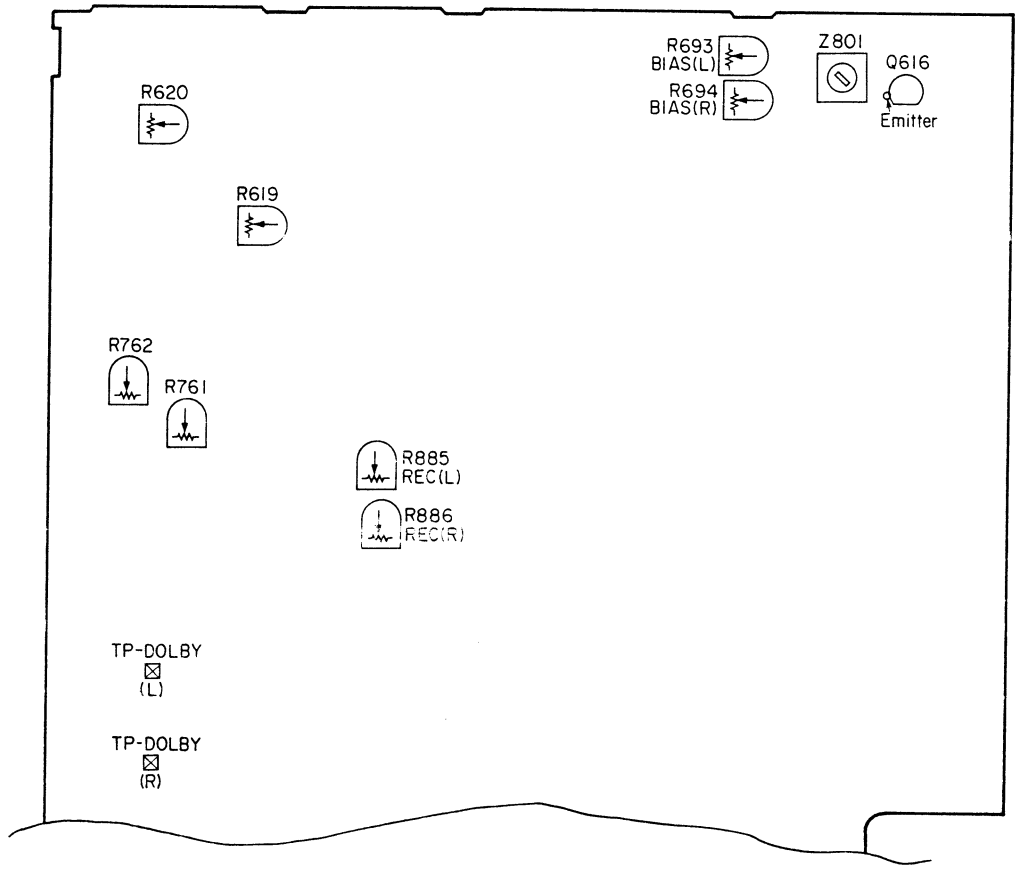
1. Open cassette lids by pushing EJECT Button.
2. Remove three screws Ⓕ, and the DECK A mechanism assembly will be removed.
3. Remove three screws Ⓖ, and the DECK B mechanism assembly will be removed.



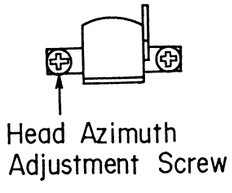
3. BLOCK DIAGRAM

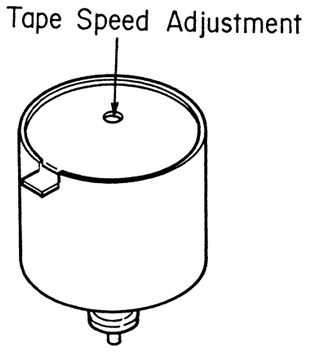


4. ADJUSTMENTS

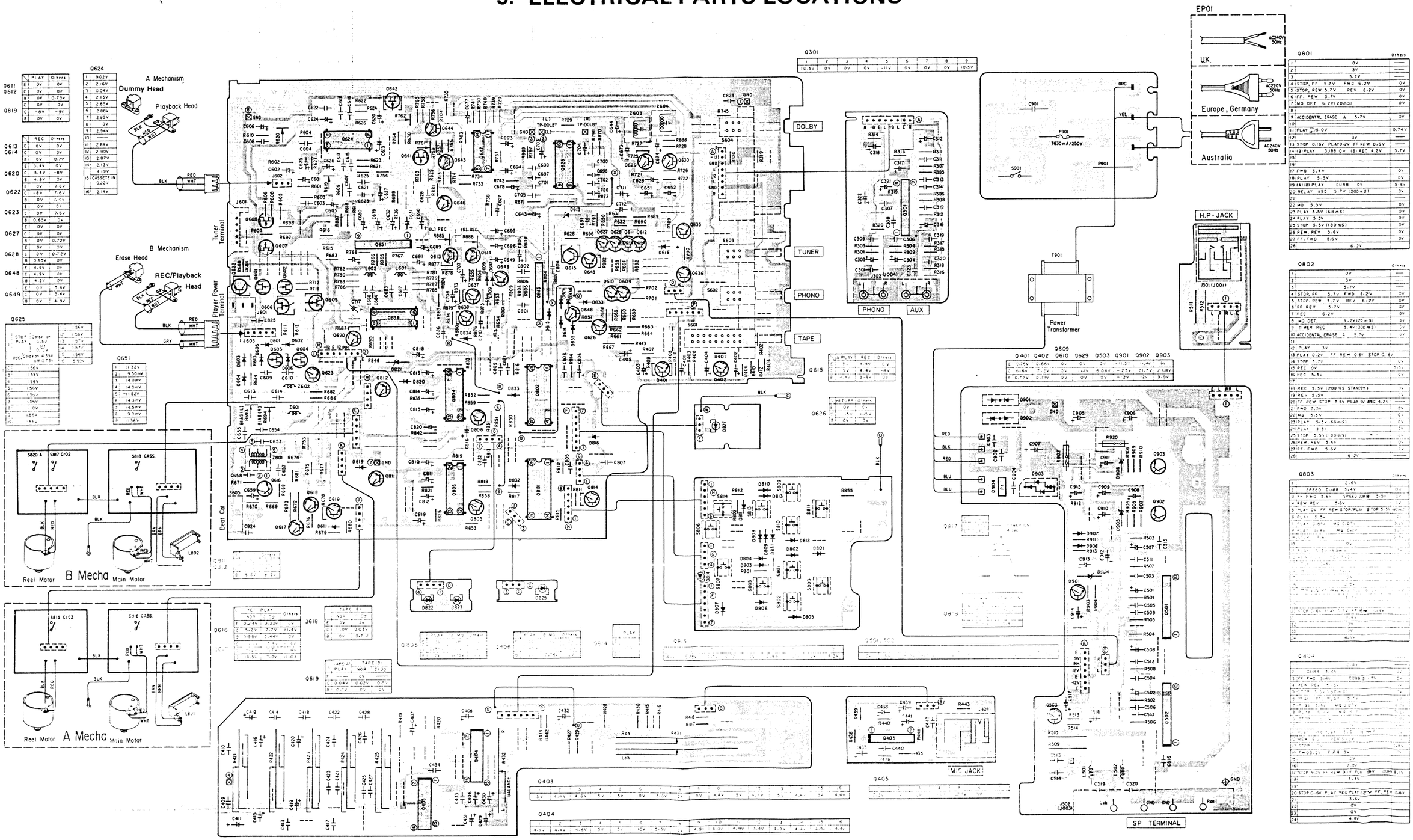


	Item	Reference Value	Tape	Volume			Switch		Adjustment Point	Test Point	Note
				Graphic Equalizer	Balance	Main	Dolby	Beat Proof			
1	Head Azimuth Adjustment FWD [DECK A, DECK B]	L, R ch Peak	MTT-114	Center	Center	II Center	OUT	(Center)	Head Screw (Left)	TP-DOLBY	After adjustment, apply screw lock at head screw. If L and R ch peak values are different, take the midium value.
2	Tape Speed Measurement [DECK A, DECK B]	3000 ±45 Hz	MTT-111	Center	Center	II Center	OUT	(Center)	Semi-fixed inside of motor	TP-DOLBY	0 ∿ –30 Hz for DECK B to A.
3	Playback Sensitivity Adjustment FWD [DECK A, DECK B]	100mV ±1 dB	MTT-150	Center	Center	II Center	IN	(Center)	B ← R619, 620 A ← R761, 762	TP-DOLBY	DECK A should be adjusted after DECK B adjustment.
4	Playback Frequency Measurement [DECK A, DECK B]	0 ±4 dB	MTT-255C	Center	Center	II Center	OUT	(Center)	–	TP-DOLBY	10 kHz level to 315 Hz.
5	Osc. Frequency Adjustment [DECK B]	87 ±0.5 kHz	AC-512	Center	Center	II Center	OUT	(Center)	Z801	Q616 Emitter	
6	Rec/Play Frequency Characteristic Adjustment [DECK B]	0 ±1 dB	AC-512	Center	Center	II Center	OUT	(Center)	R693, R694	TP-DOLBY	333 Hz – 10 kHz 7mV (–26 dBV) input from CD.
7	Rec/Play Sensitivity Adjustment [DECK B]	Monitor Output ±1 dB	AC-512	Center	Center	II Center	OUT	(Center)	R885, R886	TP-DOLBY	333 Hz 70mV (–6 dBV) input from CD.

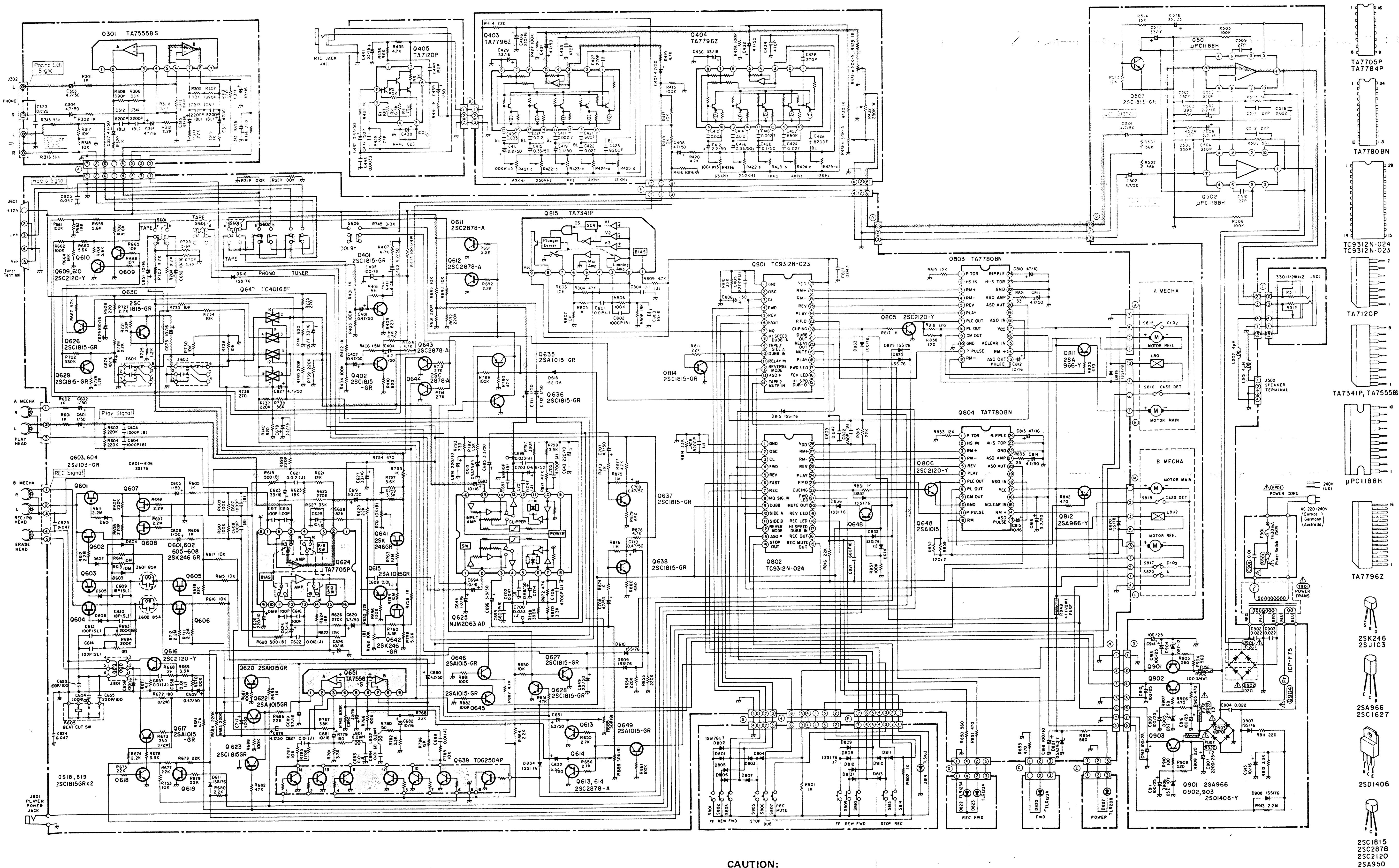




5. ELECTRICAL PARTS LOCATIONS



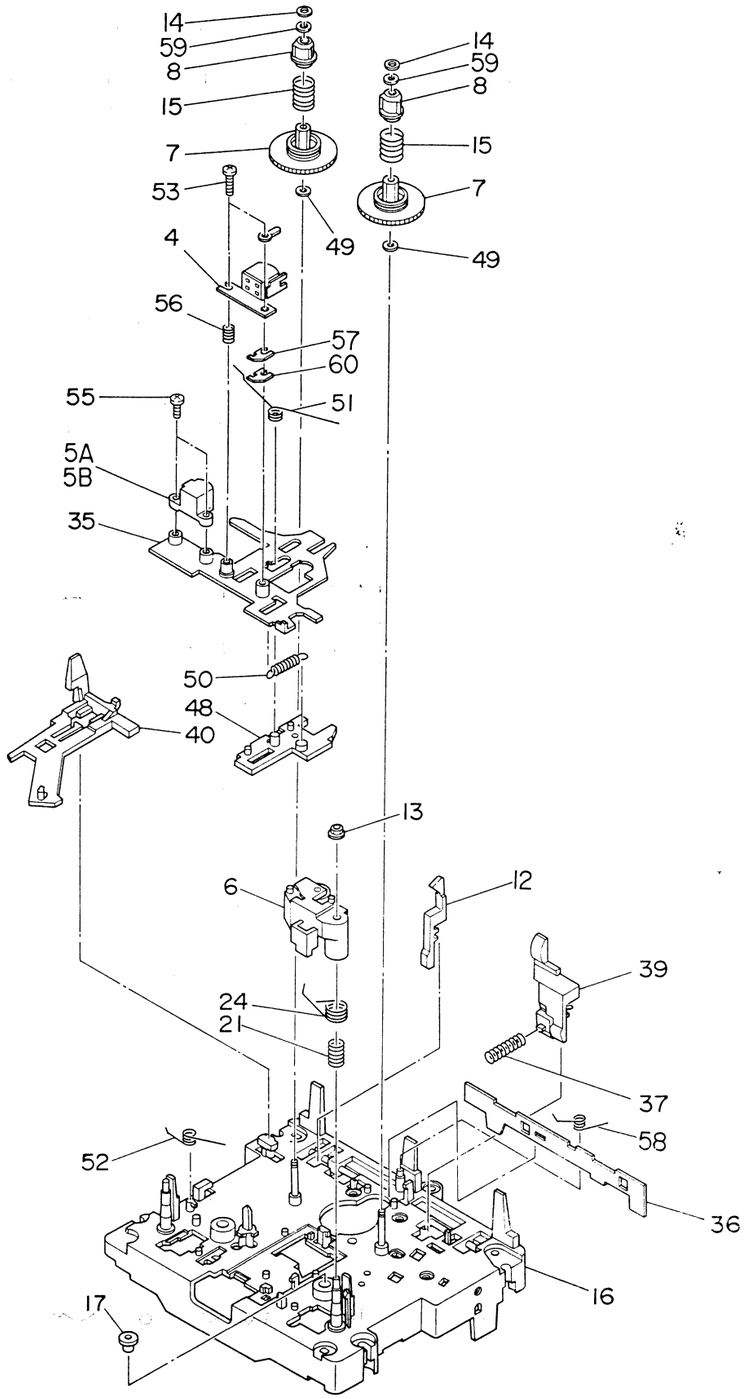
6. SCHEMATIC DIAGRAM



Q301 TA75558S
Phono Lch Signal
J302
PHONO
CD
CD Lch Signal
Radio Signal
J601
+12V
Lch
Rch
Tuner Terminal
MIC JACK J40
Q405 TA7120P
Q403 TA7796Z
Q404 TA7796Z
63KHz 250KHz 1KHz 4KHz 12KHz
Q501 μPC1188H
Q502 μPC1188H
Q503 2SC1815-GR
Q611 2SC2878-A
Q612 2SC2878-A
Q815 TA7341P
Plunger Driver
Mix Amp
Limiting Amp
BIAS
Q401 2SC1815-GR
Q402 2SC1815-GR
DOLBY
PHONO TUNER
Q609,610 2SC2120-Y
Q630 2SC1815-GR
Q647 TC4016BP
Q626 2SC1815-GR
Q629 2SC1815-GR
Q643 2SC2878-A
Q644 2SC2878-A
Q635 2SA1015-GR
Q636 2SC1815-GR
Q801 TC9312N-023
Q802 TC9312N-024
Q803 TA7780BN
Q804 TA7780BN
Q805 2SC2120-Y
Q806 2SC2120-Y
Q814 2SC1815-GR
Q811 2SA966-Y
Q812 2SA966-Y
A MECHA
B MECHA
MOTOR REEL
MOTOR MAIN
CASS DET
J501
J502 SPEAKER TERMINAL
A MECHA PLAY HEAD
Play Signal
Q603,604 2SJ103-GR
D601~606 1SS178
REC Signal
B MECHA REC/PB HEAD
ERASE HEAD
Q601,602 605~608 2SK246 GR
Q624 TA7705P
Q625 NJM2063 AD
Q637 2SC1815-GR
Q638 2SC1815-GR
Q641 2SK246GR
Q642 2SK246-GR
Q615 2SA1015GR
Q648 2SA1015
Q616 2SC2120-Y
S605 BEAT CUT SW
Q617 2SA1015-GR
Q618,619 2SC1815GRx2
J801 PLAYER POWER JACK
Q620 2SA1015GR
Q622 2SA1015GR
Q623 2SC1815GR
Q651 TA7558-S
Q639 TD62504P
Q646 2SA1015-GR
Q645 2SA1015-GR
Q627 2SC1815-GR
Q628 2SC1815-GR
Q649 2SA1015-GR
Q613,614 2SC2878-A
FF REW FWD STOP DUB
FF REW FWD STOP REC
REC FWD
FWD
POWER
EP01 POWER CORD
240V (UK)
AC 220/240V (Europe Germany Australia)
Power Switch
T901 POWER TRANS
ICP-F75
Q901 2SA966
Q902,903 2SD1406-Y
TA7705P
TA7784P
TA7780BN
TC9312N-024
TC9312N-023
TA7120P
TA7341P, TA75558S
μPC1188H
TA7796Z
2SK246
2SJ103
2SA966
2SC1627
2SD1406
2SC1815
2SC2878
2SC2120
2SA950

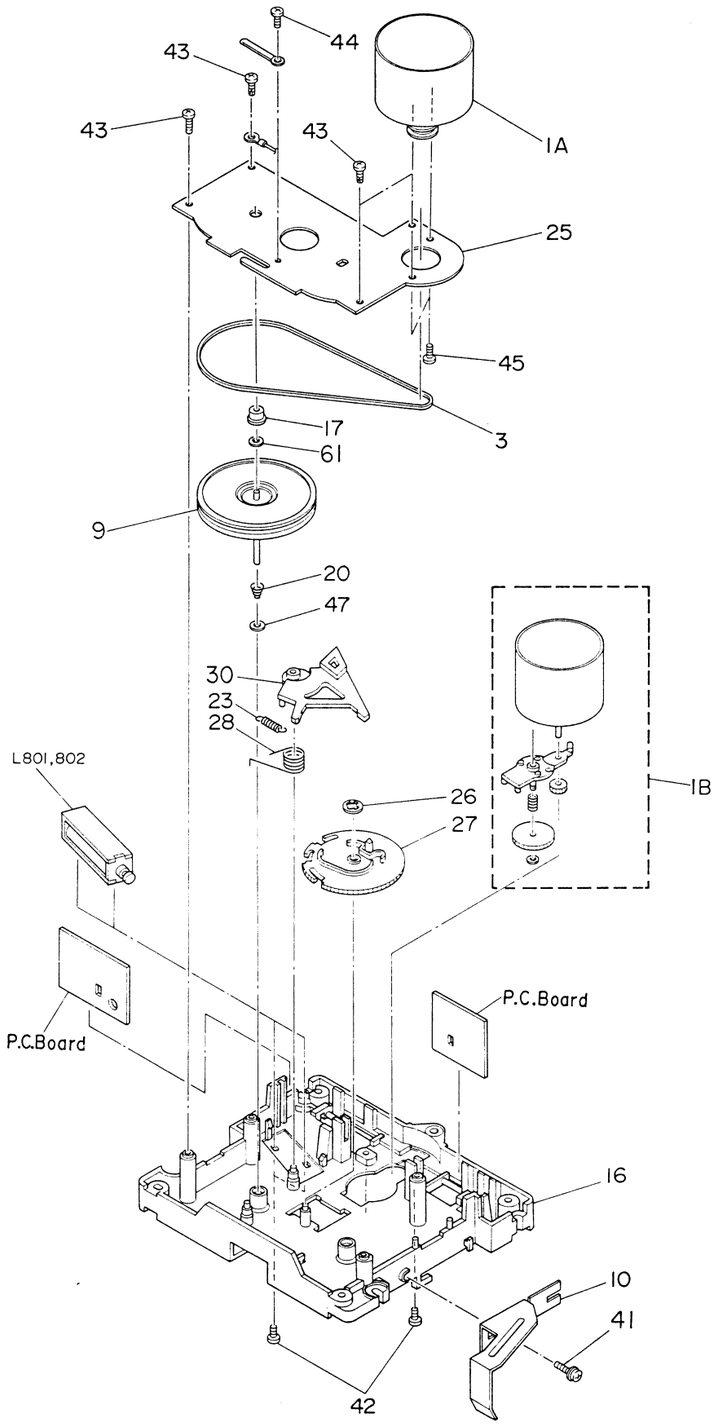
CAUTION:
The ⚠ mark, the Location No. circled with oval in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

7. MECHANISM EXPLODED VIEW (UPPER)



NOTE: Parts excluded in the parts list are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

8. MECHANISM EXPLODED VIEW (LOWER)

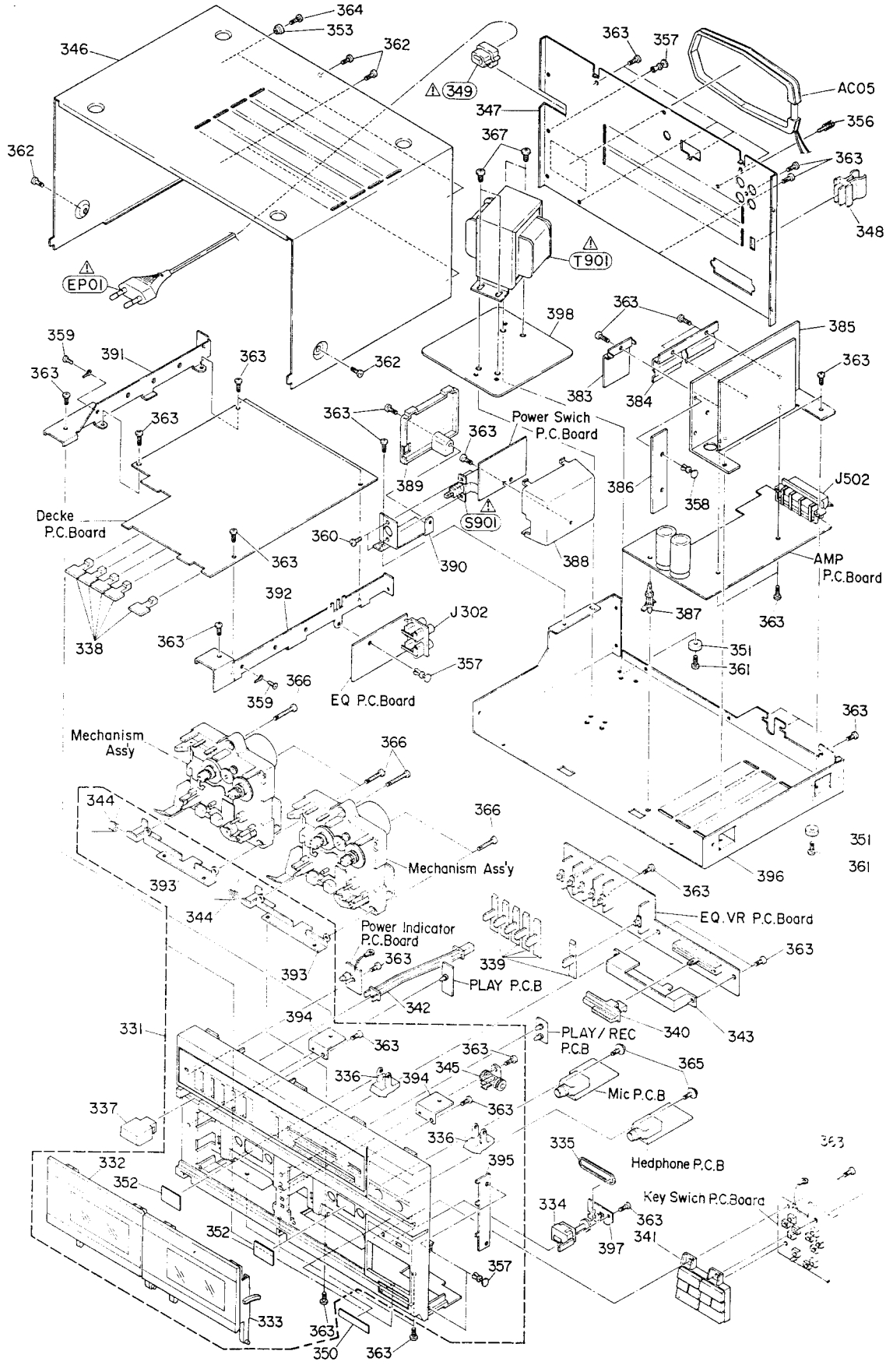


NOTE: Parts excluded in the parts list are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

9. MECHANISM PARTS LIST

Location No.	Part No.	Description
1A	25792133	Motor Ass'y, Main
1B	25792050	Motor Ass'y, Reel
3	25759071	Belt, Drive
4	22217499	Head, REC/Playback, HRPT-499
5A	22218263	Head, Erase, HET-263 (A Mecha) Dummy
5B	22218294	Head, Erase, HET-294 (B Mecha)
6	25797138	Pressure Roller
7	25754505	Reel Drum
8	25754436	Reel Collar
9	25797102	Flywheel Ass'y
12	25784369	Lever, Cassette Switch
13	25783430	Bush
14	25766050	Washer
15	25777506	Spring, Reel
16	25792079	Main Chassis Ass'y
17	25725456	Holder, Flywheel
20	25777424	Spring
21	25777520	Spring
23	25776935	Spring, Back Lever
24	25778377	Spring, Pressure Poller
26	20798033	Ring
27	25756539	Gear, Main Cam
28	25778396	Spring, Cam Lock
30	25792057	Cam Lock Lever Ass'y
35	25797139	Slider Ass'y, Head
36	25747261	Lever, Kickup
37	25777507	Spring, Holder
39	25784452	Lever, Holder
40	25784372	Slider, Eject
41	22707361	Screw, ϕ2.6 x 8mm, PAN
42	22708532	Screw, ϕ2.6 x 6mm, BID
43	22707301	Screw, ϕ2.6 x 8mm, BID Tap.
44	22707350	Screw, ϕ2.6 x 5mm, BID
45	22708528	Screw, ϕ2.6 x 3mm, BID
47	25766175	Washer, Flywheel
48	25784488	Slider, Play
49	25766223	Washer
50	25776914	Spring, Assist
51	25778309	Spring, Return
52	25778359	Spring, Eject
53	22708524	Screw, ϕ2 x 4mm, BID
55	22708526	Screw, ϕ2 x 6mm, BID
56	25777137	Spring, Azimuth
57	25735266	Adjust Spacer
58	25778360	Spring
59	25766042	Washer, Reel Adjust
60	25735276	Adjust Spacer
61	25766043	Washer

10.CABINET EXPLODED VIEW



NOTE: Parts excluded in the parts list are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

11. CABINET PARTS LIST

CAUTION:
The ⚠ mark, the Location No. circled with oval in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

Location No.	Part No.	Description
331	22825531	Front Panel Ass'y
332	25872432	Cassette Holder Ass'y (A Mecha)
333	25872433	Cassette Holder Ass'y (B Mecha)
334	25873312	Tape Counter
335	25755455	Belt, Counter
336	25886812	Knob, Eject
337	22884685	Knob, Power
338	25886799	Knob, Tape/Phono/Tuner/ CD/Dolby
339	25886800	Knob, 63H/250H/1K/4K/ 12KHz
340	25886801	Knob, Volume
341	25886813	Knob Ass'y, Play/FF Stop · Pause
342	25830304	Knob Shaft, Power
343	25872339	Decoration Plate, Volume
344	25775318	Spring, Eject
345	25883722	Damper Ass'y
346	20015482	Top Cover
347	20015510	Jack Plate (Europe)
347	20015511	Jack Plate (Germany)
347	20015512	Jack Plate (U.K., Australia)
348	22757125	Antenna Holder
⚠ 349	25844322	Cord Bush
350	22900536	Label, Japan (U.K.)
351	22874027	Foot
352	25808372	Reflector
353	25875005	Holder, Player
356	20794122	Screw, Ground
357	22705020	Plastic Rivet, ϕ3 x 4.5mm
358	22705022	Plastic Rivet, ϕ3 x 5.5mm
359	22707502	Screw, ϕ3 x 5mm, FTBID
360	22708539	Screw, ϕ3 x 6mm, BID
361	22707842	Screw, ϕ3 x 8mm, BID Tap
362	22707885	Screw, ϕ3 x 8mm, BID Tap
363	22707826	Screw, ϕ3 x 10mm, BID Tap
364	22708033	Screw, ϕ3 x 10mm, BID Tap
365	22708048	Screw, ϕ3 x 10mm, TPAN
366	22707843	Screw, ϕ3 x 16mm, BID Tap
367	22707185	Screw, ϕ4 x 8mm, FTBID

Location No.	Part No.	Description

SJ-V12

12.PARTS LIST

CAUTION:
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Location No.	Part No.	Description
IC'S, TRANSISTORS & DIODES		
Q301	B0350510	IC, TA75558S
Q401, 402	A6317460	Transistor, 2SC1815NEW-GR/BL
Q403, 404	B0358475	IC, TA7796Z
Q405	B0311000	IC, TA7120P
Q501, 502	22117208	IC, μPC1188H
Q503	A6317460	Transistor, 2SC1815NEW-GR/BL
Q601, 602	A6044630	Transistor, 2SK246-GR-Y/GR
Q603, 604	A6040910	Transistor, 2SJ103-GR-Y/GR
Q605, 606	A6044630	Transistor, 2SK246-GR-Y/GR
Q607, 608	A6044630	Transistor, 2SK246-GR-Y/GR
Q609, 610	A6321240	Transistor, 2SC2120-Y
Q611, 612	A6342200	Transistor, 2SC2878-A
Q613, 614	A6342200	Transistor, 2SC2878-A
Q615	A6534060	Transistor, 2SA1015-GR-GR/BL
Q616	A6321240	Transistor, 2SC2120-Y
Q617	A6534060	Transistor, 2SA1015-GR-GR/BL
Q618, 619	A6317460	Transistor, 2SC1815NEW-GR/BL
Q620	A6534060	Transistor, 2SA1015-GR-GR/BL
Q622	A6534060	Transistor, 2SA1015-GR-GR/BL
Q623	A6317460	Transistor, 2SC1815NEW-GR/BL
Q624	B0357320	IC, TA7705P
Q625	22117427	IC, NJM2063AD
Q626, 627	A6317460	Transistor, 2SC1815NEW-GR/BL
Q628, 629	A6317460	Transistor, 2SC1815NEW-GR/BL
Q630	A6317460	Transistor, 2SC1815NEW-GR/BL
Q635	A6534060	Transistor, 2SA1015-GR-GR/BL
Q636, 637	A6317460	Transistor, 2SC1815NEW-GR/BL

Location No.	Part No.	Description
Q638	A6317460	Transistor, 2SC1815NEW-GR/BL
Q639	B0275020	IC, TD62504P
Q641, 642	A6044630	Transistor, 2SK246-GR Y/GR
Q643, 644	A6342200	Transistor, 2SC2878-A
Q645, 646	A6534060	Transistor, 2SA1015-GR-GR/BL
Q647	B0470162	IC, TC4016BP
Q648, 649	A6534060	Transistor, 2SA1015-GR-GR/BL
Q651	B0350510	IC, TA75558S
Q801	22117714	IC, TC9312N-023
Q802	22117715	IC, TC9312N-024
Q803, 804	B0358317	IC, TA7780BN
Q805, 806	A6321240	Transistor, 2SC2120-Y
Q811, 812	A6533240	Transistor, 2SA966-Y
Q814	A6317460	Transistor, 2SC1815NEW-GR/BL
Q815	B0325320	IC, TA7341P
Q901	A6533240	Transistor, 2SA966-Y,O/Y
Q902, 903	A6868020	Transistor, 2SD1406-Y, O/Y
⚠ Q904	22118223	IC Protector, ICP-F752.7A
D601, 602	A7160610	Diode, 1SS178
D603, 604	A7160610	Diode, 1SS178
D605, 606	A7160610	Diode, 1SS178
D609, 610	A7160570	Diode, 1SS176
D611	A7160570	Diode, 1SS176
D613	A7112400	Dioe, 05AZ5.6-Y
D614, 615	A7160570	Diode, 1SS176
D616	A7160570	Diode, 1SS176
D801, 802	A7160570	Diode, 1SS176
D803, 804	A7160570	Diode, 1SS176
D805, 806	A7160570	Diode, 1SS176
D807, 808	A7160570	Diode, 1SS176
D809, 810	A7160570	Diode, 1SS176
D811, 812	A7160570	Diode, 1SS176
D813	A7160570	Diode, 1SS176
D814	A8636560	Diode, TLS163
D816	A7160570	Diode, 1SS176
D819, 820	A7160610	Diode, 1SS178
D821	A7112480	Diode, 05AZ6.2-Y
D822	A8601100	Diode, TLR123
D823	A8606151	Diode, TLG123A

Location No.	Part No.	Description
D825	A8606151	Diode, TLG123A
D827	A8603140	Diode, TLR208
D829, 830	A7160570	Diode, 1SS176
D831, 832	A7160570	Diode, 1SS176
D833, 834	A7160570	Diode, 1SS176
D835, 836	A7160570	Diode, 1SS176
⚠ D901	A7682021	Diode, 1D2C1 (T)
⚠ D902	A7682061	Diode, 1D2Z1 (T)
⚠ D903	22115737	Diode, KBP01
D904, 905	A7113040	Diode, 05AZ12-Y
D906	A7112880	Diode, 05AZ10-Y
D907, 908	A7160570	Diode, 1SS176

ELECTRICAL PARTS

L501, 502	22210152	Choke Coil, 4μH
L601, 602	22232278	Choke Coil, 8.2mH
L801, 802	22147291	Solenoid Coil
⚠ T901	22224524	Power Transformer (Europe, Germany)
⚠ T901	22224523	Power Transformer (U.K.)
⚠ T901	22224529	Power Transformer (Australia)
S601, 602	22196739	Push Switch, Tape/Phono
S603, 604	22196739	Push Switch, Tuner/Dolby
S605	22196740	Slide Switch, Beat Cut
S801, 802	22196773	Key Switch, FF/REW (A Mecha)
S803, 805	22196773	Key Switch, FWD/STOP (A Mecha)
S806, 807	22196773	Key Switch, Pause/REC Mute (A Mecha)
S809, 810	22196773	Key Switch, FF/REW (B Mecha)
S811, 813	22196773	Key Switch, FWD/Stop (B Mecha)
S814	22196773	Key Switch, REC (B Mecha)
S815, 816	22196704	Leaf Switch, Chrome/ Cassette (A Mecha)
S817, 818	22196704	Leaf Switch, Chrome/ Cassette (B Mecha)
S819, 820	22196704	Leaf Switch, Tape B/Tape A (B Mecha)
⚠ S901	22196751	Push Switch, Power (Europe, Germany, Australia)
⚠ S901	22196516	Push Switch, Power (U.K.)

Location No.	Part No.	Description
J302	22163909	Pin Jack, US4P
J401	22198112	Jack, φ6, MIC
J501	22198177	Jack, φ6, Headphone
J502	22162546	Terminal, 4P, Speaker
J601	22186009	Connector Socket, 5P
J801	22163826	Jack, φ3.5, Player Power
Z601, 602	22153229	Bias Trap Coil, 85 kHz
Z603, 604	22153278	Dolby Filter
Z801	22235274	Bias Osc. Coil
⚠ F901	22144432	Fuse, T630mA, 250V (Europe, Germany, Australia)
⚠ F901	22144512	Fuse, T630mA, 250V (U.K.)
⚠ EP01	22176286	Power Cord (Europe, Germany)
⚠ EP01	22176628	Power Cord (U.K.)
⚠ EP01	22176588	Power Cord (Australia)
EP02	22165036	Fuse Holder

CAPACITORS

D = ±0.5pF, J = ±5%, K = ±10%, M = ±20%, Z = −20+80%

ABBREVIATIONS: EL = Electrolytic, BL = Barrier Layer, CD = Ceramic Disk, MY = Mylar, PP = Polypropylene

C303, 304	22488479	EL, 4.7mfd, 50V
C311, 312	22360543	BL, 8200pF, 25V, K
C313, 314	23360536	BL, 2200pF, 25V, K
C315, 316	22485470	EL, 47mfd, 16V
C317, 318	22485100	EL, 10mfd, 16V
C321, 322	22488479	EL, 4.7mfd, 50V
C323	22342223	CD, 0.022mfd, 50V, Z
C401, 402	22488478	EL, 0.47mfd, 50V
C403, 404	22488109	EL, 1mfd, 50V
C405, 406	22485101	EL, 100mfd, 16V
C407, 408	22488479	EL, 4.7mfd, 50V
C409, 410	22360330	EL, 0.033mfd, 25V, M
C411, 412	22488229	EL, 2.2mfd, 50V
C413, 414	22360545	BL, 0.012mfd, 25V, K
C415, 416	22488338	EL, 0.33mfd, 50V
C417, 418	22360537	BL, 2700pF, 25V, K
C419, 420	22488108	EL, 0.1mfd, 50V
C421, 422	22349681	CD, 680pF, 50V, K
C423, 424	22360549	BL, 0.027mfd, 25V, K
C425, 426	22360543	BL, 8200pF, 25V, K
C427, 428	22349271	CD, 270pF, 50V, K
C429	22485330	EL, 33mfd, 16V
C430	22485330	EL, 33mfd, 16V
C431, 432	22488478	EL, 0.47mfd, 50V
C433, 434	22349471	CD, 470pF, 50V, K

Location No.	Part No.	Description
C435	22488478	EL, 0.47mfd, 50V
C438	22483101	EL, 100mfd, 10V
C439	22488109	EL, 1mfd, 50V
C440	22349151	CD, 150pF, 50V, K
C441	22485330	EL, 33mfd, 16V
C443	22349332	CD, 3300pF, 50V, K
C501, 502	22488479	EL, 4.7mfd, 50V
C503, 504	22349331	CD, 330pF, 50V, K
C505, 506	22349331	CD, 330pF, 50V, K
C507, 508	22485220	EL, 22mfd, 16V
C509, 510	22361270	CD, 27pF, 50V, J
C511, 512	22361270	CD, 27pF, 50V, J
C513, 514	22371333	MY, 0.033mfd, 50V, J
C515, 516	22342223	CD, 0.022mfd, 50V, Z
C517	22485330	EL, 33mfd, 16V
C518	22487220	EL, 22mfd, 35V
C601, 602	22488109	EL, 1mfd, 50V
C603, 604	22349102	CD, 1000pF, 50V, K
C605, 606	22488109	EL, 1mfd, 50V
C607, 608	22349102	CD, 1000pF, 50V, K
C609, 610	22361180	CD, 18pF, 50V, J
C613, 614	22362101	CD, 100pF, 50V, K
C615, 616	22362101	CD, 100pF, 50V, K
C617, 618	22362101	CD, 100pF, 50V, K
C619, 620	22488339	EL, 3.3mfd, 50V
C621, 622	22371103	MY, 0.01mfd, 50V, J
C623, 624	22485330	EL, 33mfd, 16V
C625	22485100	EL, 10mfd, 16V
C626	22483221	EL, 220mfd, 10V
C627	22485330	EL, 33mfd, 16V
C628	22371103	MY, 0.01mfd, 50V, J
C631, 632	22488338	EL, 0.33mfd, 50V
C643	22483221	EL, 220mfd, 10V
C644	22485330	EL, 33mfd, 16V
C649	22488229	EL, 2.2mfd, 50V
C651, 652	22488479	EL, 4.7mfd, 50V
C653	22321115	PP, 1800pF, 100V, J
C654	22321100	PP, 100pF, 100V, J
C655	22321104	PP, 220pF, 100V, J
C657, 658	22371103	MY, 0.01mfd, 50V, J
C659	22488478	EL, 0.47mfd, 50V
C673, 674	22485100	EL, 10mfd, 16V
C677, 678	22485330	EL, 33mfd, 16V
C679, 680	22488479	EL, 4.7mfd, 50V
C681, 682	22485100	EL, 10mfd, 16V
C683, 684	22371103	MY, 0.01mfd, 50V, J
C687, 688	22371103	MY, 0.01mfd, 50V, J
C689, 690	22485330	EL, 33mfd, 16V
C691	22483221	EL, 220mfd, 10V
C693, 694	22485100	EL, 10mfd, 16V
C695, 696	22488339	EL, 3.3mfd, 50V

Location No.	Part No.	Description
C697, 698	22360542	BL, 6800pF, 25V, K
C699, 700	22371333	MY, 0.033mfd, 50V, J
C701, 702	22371473	MY, 0.047mfd, 50V, J
C703, 704	22480008	EL, 0.68mfd, 50V
C705, 706	22371472	MY, 4700pF, 50V, J
C707, 708	22488479	EL, 4.7mfd, 50V
C709, 710	22488478	EL, 0.47mfd, 50V
C711, 712	22488109	EL, 1mfd, 50V
C717	22488479	EL, 4.7mfd, 50V
C801	22371153	MY, 0.015mfd, 50V, J
C802	22349102	CD, 1000pF, 50V, K
C803	22485100	EL, 10mfd, 16V
C804	22371104	MY, 0.1mfd, 50V, J
C805	22371822	MY, 8200pF, 50V, J
C806	22488109	EL, 1mfd, 50V
C807	22342473	CD, 0.047mfd, 50V, Z
C808	22371822	MY, 8200pF, 50V, J
C809	22342473	CD, 0.047mfd, 50V, Z
C810	22483470	EL, 47mfd, 10V
C811	22488479	EL, 4.7mfd, 50V
C812	22485100	EL, 10mfd, 16V
C813	22483470	EL, 47mfd, 10V
C814	22488479	EL, 4.7mfd, 50V
C815	22485100	EL, 10mfd, 16V
C816	22488339	EL, 3.3mfd, 50V
C818	22483101	EL, 100mfd, 10V
C821, 822	22349681	CD, 680pF, 50V, K
C823, 824	22342473	CD, 0.047mfd, 50V, Z
C825	22342473	CD, 0.047mfd, 50V, Z
C826	22485100	EL, 10mfd, 16V
C827	22488479	EL, 4.7mfd, 50V
C828	22485101	EL, 100mfd, 16V
C856	22485101	EL, 100mfd, 16V
⚠ C901	22340226	CD, 4700pF, 400V, M (Europe, Germany, Australia)
⚠ C901	22340229	CD, 4700pF, 400V, M (U.K.)
C902, 903	22342223	CD, 0.022mfd, 50V, Z
C904	22342223	CD, 0.022mfd, 50V, Z
C905, 906	22440629	EL, 4700mfd, 35V
C907	22486222	EL, 2200mfd, 25V
C908, 909	22486101	EL, 100mfd, 25V
C910, 911	22486101	EL, 100mfd, 25V
C912, 913	22486101	EL, 100mfd, 25V
C914	22486101	EL, 100mfd, 25V
C915	22485100	EL, 10mfd, 16V

RESISTORS

All resistors are carbon film, 1/6W, ±5% unless otherwise noted. 1K ohm = 1000 ohm, 1M ohm = 1000K ohm

Location No.	Part No.	Description
R301, 302	22584102	1K ohm
R303, 304	22584104	100K ohm
R305, 306	22584333	33K ohm
R307, 308	22584394	390K ohm
R311, 312	22584222	2.2K ohm
R313, 314	22584151	150 ohm
R315, 316	22584563	56K ohm
R317, 318	22584103	10K ohm
R319, 320	22584102	1K ohm
R319, 320	22584104	100K ohm
R401, 402	22584102	1K ohm
R403, 404	22584104	100K ohm
R405, 406	22584155	1.5M ohm
R407, 408	22584472	4.7K ohm
R409, 410	22584821	820 ohm
R411, 412	22584472	4.7K ohm
R413	22555101	100 ohm, 1/4W
R414	22584221	220 ohm
R415, 416	22584104	100K ohm
R417, 418	22584103	10K ohm
R419, 420	22584472	4.7K ohm
R421	22657400	100K ohm, W, Variable, 63Hz
R422	22657400	100K ohm, W, Variable, 250Hz
R423	22657400	100K ohm, W, Variable, 1kHz
R424	22657400	100K ohm, W, Variable, 4kHz
R425	22657400	100K ohm, W, Variable, 12kHz
R427, 428	22584104	100K ohm
R429, 430	22584102	1K ohm
R431	22657313	50K ohm, A, Variable, Volume
R432	22657402	250K ohm, W, Variable, Balance
R433	22584103	10K ohm
R435	22584472	4.7K ohm
R436	22584563	56K ohm
R438	22584102	1K ohm
R439	22584273	27K ohm
R440	22584821	820 ohm
R441	22584102	1K ohm
R442	22584221	220 ohm
R501, 502	22584563	56K ohm
R503, 504	22584391	390 ohm
R505, 506	22584104	100K ohm
R507, 508	22584563	56K ohm
R509, 510	22570250	10 ohm, 1W, Metal Film
R511, 512	22547331	330 ohm, 1/2W
R514	22584154	150K ohm

Location No.	Part No.	Description
R601, 602	22584102	1K ohm
R603, 604	22584104	100K ohm
R605, 606	22584102	1K ohm
R607, 608	22584224	220K ohm
R609, 610	22584104	100K ohm
R611, 612	22584225	2.2M ohm
R613, 614	22555106	10M ohm, 1/4W
R615, 616	22584103	10K ohm
R617, 618	22584103	10K ohm
R619, 620	22658756	500 ohm, B, Semi-fixed, Variable
R621, 622	22584123	12K ohm
R623, 624	22584183	18K ohm
R625, 626	22584274	270K ohm
R627	22584333	33K ohm
R628	22584823	82K ohm
R629, 630	22584223	22K ohm
R631, 632	22584224	220K ohm
R650	22584103	10K ohm
R653, 654	22584224	220K ohm
R655, 656	22584272	2.7K ohm
R658	22584473	47K ohm
R659, 660	22584562	5.6K ohm
R661, 662	22584183	18K ohm
R663, 664	22584104	100K ohm
R665, 666	22584103	10K ohm
R667	22584472	4.7K ohm
R668	22584390	39 ohm
R669	22584332	3.3K ohm
R670	22584104	100K ohm
R671	22584479	4.7 ohm
R672	22547181	180 ohm, 1/2W
R673	22547331	330 ohm, 1/2W
R674	22584222	2.2K ohm
R675	22584223	22K ohm
R676	22584332	3.3K ohm
R677, 678	22584223	22K ohm
R679	22584223	22K ohm
R680	22584222	2.2K ohm
R681	22584472	4.7K ohm
R682	22584473	47K ohm
R683, 684	22584224	220K ohm
R686	22584223	22K ohm
R687, 688	22584224	220K ohm
R689, 690	22584103	10K ohm
R691, 692	22584222	2.2K ohm
R693, 694	22658766	200K ohm, B, Semi-fixed Variable
R695	22584102	1K ohm
R696	22584104	100K ohm
R697, 698	22584225	2.2M ohm
R699	22584224	220K ohm

Location No.	Part No.	Description
R701, 702	22584562	5.6K ohm
R703, 704	22584822	8.2K ohm
R711, 712	22584225	2.2M ohm
R713, 714	22584272	2.7K ohm
R721, 722	22584334	330K ohm
R725, 726	22584122	1.2K ohm
R727, 728	22584272	2.7K ohm
R729, 730	22584103	10K ohm
R733, 734	22584103	10K ohm
R735, 736	22584271	270 ohm
R737	22584224	220K ohm
R738	22584563	56K ohm
R739, 740	22584224	220K ohm
R741, 742	22584821	820 ohm
R745	22584332	3.3K ohm
R753	22584103	10K ohm
R754	22584471	470 ohm
R755, 756	22584102	1K ohm
R757, 758	22584562	5.6K ohm
R759, 760	22584332	3.3K ohm
R761, 762	22658761	10K ohm, B, Semi-fixed Variable
R763, 764	22555106	10M ohm, 1/4W
R765, 766	22584104	100K ohm
R767, 768	22584333	33K ohm
R779, 780	22584151	150 ohm
R781, 782	22584332	3.3K ohm
R785, 786	22584123	12K ohm
R787, 788	22584103	10K ohm
R789	22584104	100K ohm
R790	22584473	47K ohm
R792	22584152	1.5K ohm
R793	22584331	330 ohm
R797, 798	22584394	390K ohm
R801, 802	22584102	1K ohm
R803	22584103	10K ohm
R804	22584473	47K ohm
R805	22584102	1K ohm
R806	22584104	100K ohm
R807	22584103	10K ohm
R808	22584183	18K ohm
R809	22584472	4.7K ohm
R811	22584222	2.2K ohm
R813	22584223	22K ohm
R815	22584561	560 ohm
R816	22584223	22K ohm
R817	22584102	1K ohm
R818	22555121	120 ohm, 1/4W
R810	22555333	33K ohm
R814	22555333	33K ohm
R819	22555123	12K ohm

Location No.	Part No.	Description
R821	22555330	33 ohm
R825	22555471	470 ohm
R831	22555102	1K ohm
R832	22555121	120 ohm, 1/4W
R833	22584123	12K ohm
R835	22584330	33 ohm
R842	22584471	470 ohm
⚠ R849	22500119	47 ohm, 1/4W, Fusible
R850	22584561	560 ohm
R851	22584471	470 ohm
R853	22584471	470 ohm
R854	22584561	560 ohm
R857	22584104	100K ohm
R858, 859	22555121	120 ohm, 1/4W
R861	22584104	100K ohm
R869, 870	22584332	3.3K ohm
R871, 872	22584473	47K ohm
R873, 874	22584102	1K ohm
R875, 876	22584105	1M ohm
R877, 878	22584472	4.7K ohm
R879, 880	22584681	680 ohm
R881, 882	22584104	100K ohm
R884	22584222	2.2K ohm
R885, 886	22658764	50K ohm, B, Semi-fixed Variable
R887	22584472	4.7K ohm
R888	22584221	220 ohm
⚠ R902	22500122	100 ohm, 1/4W, Fisible
R903, 904	22584561	560 ohm
R905, 906	22584471	470 ohm
R907	22584680	68 ohm
R908, 909	22584221	220 ohm
R910	22584101	100 ohm
R911	22584221	220 ohm
R912	22584332	3.3K ohm
R913	22584225	2.2M ohm
⚠ R920, 922	22500472	1.2 ohm, 1/4W, Fusible

ACCESSORIES

AC01	22904935	Owner's Manyal (Europe)
AC01	22904936	Owner's Manual (Germany)
AC01	22904937	Owner's Manual (U. K., Australia)
AC02	22124806	Antenna Cord
AC03	22197006	Connector Socket 5
AC04	20842196	Player Rest
AC05	22243002	Loop Antenna